

APR 11 2005

## IN THE UNITED STATES PATENT &amp; TRADEMARK OFFICE

In re Application of:  
Mosler et al.

Group Art Unit: 1751

Serial No.: 09/921,238

Examiner: Hamlin, Derrick G.

Filed: August 2, 2001

Title: Transesterification Composition of  
Fatty Acid Esters, and Uses Thereof

Docket No.: 0468FV.44178

## DECLARATION OF DR. ERIC SIMANEK

I, Dr. Eric Simanek, state the following, of which I have personal knowledge:

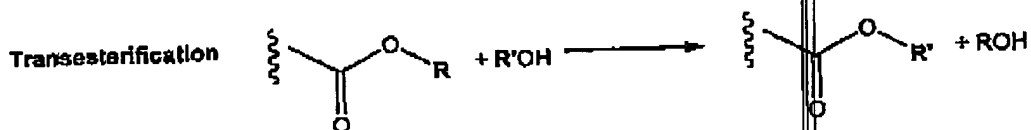
1. I am an Associate Professor of Chemistry at Texas A&M University System and I maintain an office in the Department of Chemistry at Texas A&M University in College Station. I have taught chemistry since 1998. I have held this position (or that of Assistant Professor) since 1998. I am familiar with the disclosure in the above-identified patent application and in US Patent US 5,468,405 issued to Klein ("the Klein patent").
2. I am not an employee of the Applicant identified above. I have acted and do act as a consultant to MJ Research for particular projects.
3. I am not a named inventor of the subject application.
4. It is my understanding from reading the subject application that a reaction resulting in transesterification is described and claimed.
5. I find no reference to transesterification in the Klein patent. Klein described dehydration of castor oil. Klein elaborates that the dehydrated castor oil can be "used with known base oils, such as mineral oils, synthetic ester oils of dicarboxylic acids and alkanols or dicarboxylic acids and monocarboxylic acids and alkanols and with natural esters, such as triglycerides." Klein never identifies any of these compounds specifically; there are literally millions of combinations

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of such molecules readily imaginable. No reaction of the dehydrated castor oil with alcohol is described by Klein. It is my opinion that no transesterification with exogenous alcohols is possible because alcohols are never added for that purpose. They are potentially added after the dehydration process under process conditions that would make it virtually impossible to create a transesterified fatty acid ester. In my opinion, there are no physical conditions under which this mixture of dehydrated castor oil and alkanol could take place that would result in a transesterified fatty acid ester.

Klein teaches dehydration: Dehydration is a process that in no way resembles transesterification. Dehydration is an elimination reaction wherein a molecule of water is produced leading to the formation of a double bond. The result is increasing iodine values and decreasing hydroxy values. The process described is in no way related to ester functional groups; transesterification is formally a substitution reaction. The process of interest (which in no way relates to Klein) involves the substitution of glycerol esters for propyl esters (and esters of other alkanols). This substitution is a chemical transformation. Further distinguishing these two processes are, a) during a transesterification, double bond content and hydroxy values remain unchanged, and 2) during a transesterification, water is not produced.



In my opinion, the Klein dehydration process cannot produce a transesterified fatty acid ester.

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I hereby declare under penalty of perjury that the foregoing is true and correct.

Dated:



Dr. Eric Simanek

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